CLAIMS

1. A shaped charge booster assembly comprising a casement having a primer path and a main cavity, said primer path being charged with an explosive material having a first density to link said main cavity with a booster ignition point, said main cavity being charged with an explosive material having a second density, an enclosure wall of said main cavity substantially opposite of said primer path being formed by an end plug.

2. A shaped charge booster assembly as described by claim 1 wherein said first density is less than said second density.

3. A shaped charge booster assembly as described by claim 2 wherein said first density is about 1.1 g/cc to about 1.2 g/cc.

4. A shaped charge booster assembly as described by claim 2 wherein said second density is about 1.5 g/cc to about 1.6 g/cc.

5. A shaped charge booster assembly as described by claim 1 wherein casement wall thickness surrounding said primer path is substantially greater than casement wall thickness surrounding said main cavity.

6. A shaped charge booster assembly as described by claim 1 wherein said casement comprises a substantial cylinder of non-ferrous metal, said primer path comprising an axial bore of about 0.045" to about 0.080" and said main cavity comprises an axial bore encompassed by a casement wall less than about 0.010" thick.

7. A shaped charge booster assembly as described by claim 6 wherein casement wall encompassing said primer path is about 0.080" to about 0.100" thick.

8. A shaped charge booster assembly as described by claim 6 wherein explosive material within said primer path bore is charged with a density of about 1.1 to about 1.2 g/cc and explosive material in said main cavity is charged with a density of about 1.5 to about 1.6 g/cc.

9. A shaped charge booster assembly comprising a casement having a primer path circumscribed by a first casement wall thickness opening into a main cavity circumscribed by a second casement wall thickness that is less than said first wall thickness, said primer path and main cavity being respectively charged with explosive material, the explosive material charge in said primer path providing sufficient energy to detonate the explosive material in said main cavity but insufficient energy to propagate detonation of explosive material externally surrounding said first casement wall.

10. A shaped charge booster assembly as described by claim 9 wherein the explosive material density in said primer path is less than the explosive material density in said main cavity.

11. A shaped charge booster assembly as described by claim 10 wherein said primer path material density is about 1.1 g/cc to about 1.2 g/cc.

12. A shaped charge booster assembly as described by claim 10 wherein said main cavity material density is about 1.5 g/cc to about 1.6 g/cc.

13. A shaped charge booster assembly as described by claim 9 wherein the first casement wall thickness is about 0.080" to about 0.100".

14. A shaped charge booster assembly as described by claim 9 wherein said second casement wall thickness is less than about 0.010".

15. A shaped charge tubing cutter comprising a pair of substantially matched

explosive units respectively formed about an axis of revolution into a substantial cone having a normally truncated apex, said units being joined coaxially at said truncated apex along a substantially common juncture plane, an aperture within said units substantially along said axis and crossing said juncture plane for receipt of a detonation booster, conical surface elements of said units being clad with a powdered metal liner comprising a mixture of tungsten, copper and lead.

16. A shaped charge tubing cutter as described by claim 15 wherein said explosive units are substantially separated from housing structure at opposite axial ends by spacer elements.

17. A shaped charge tubing cutter as described by claim 15 wherein said explosive units are enclosed by a housing having a fluid tight assembly with a tool sub, said housing having a jet window perimetrically adjacent said conical surface elements, said jet window comprising a pair of inside wall channels turned into inside housing walls, opposite radial side walls of said channels being substantially symmetric about said juncture plane.

18. A shaped charge tubing cutter as described by claim 17 wherein radial side walls respective to one channel of said pair substantially align with conical base lines for said liner elements.

19. A shaped charge tubing cutter as described by claim 15 wherein the copper and lead constituency of said mixture comprises about 80% copper.

20. A shaped charge tubing cutter as described by claim 15 wherein the copper and lead constituency of said mixture comprises about 20% lead.

21. A shaped charge tubing cutter as described by claim 15 wherein said powdered metal liner comprises about 80+% tungsten.

22. A shaped charge tubing cutter comprising a pair of substantially matched explosive units respectively formed about an axis of revolution into substantial cones having a normally truncated apex, said cones being joined coaxially at said truncated apex along a common juncture plane, an aperture within said units substantially along said axis and crossing said juncture plane for receipt of a detonation booster, said explosive units being encased within a substantially cylindrical housing having circumferential lines of structural weakness adjacent base lines of said cones.

23. A shaped charge tubing cutter as described by claim 22 wherein said housing comprises an internal jet window between said lines of structural weakness, said jet window comprising at least a pair of circumferential channels about a cylindrical interior wall of said housing, one of said channels having a greater inside diameter than the other and the other of said channels having a greater axial length between substantially radial sidewalls, said one channel being disposed between the sidewalls of said other channel.

24. A shaped charge tubing cutter as described by claim 22 wherein said housing is secured to a substantially cylindrical top sub, said top sub having a substantially axial aperture aligned with the axis of revolution of said explosive units for receipt of a detonator, said axial aperture having at least one lateral pressure vent.

25. A shaped charge tubing cutter as described by claim 22 wherein said cylindrical housing comprises a tool centralizer secured to a closed distal end of said housing, said centralizer comprising a plurality of substantially flat spring blades.

26. A shaped charge tubing cutter as described by claim 22 wherein said centralizer is secured to an axially projected salient of said housing whereby said centralizer blades may flex without engaging circumferential housing structure.

27. A shaped charge tubing cutter comprising a pair of substantially matched explosive units respectively formed about an axis of revolution into substantial cones having a normally truncated apex, said cones being joined coaxially at said truncated apex along a common juncture plane, an aperture within said units substantially along said axis and crossing said juncture plane for receipt of a detonation booster, said explosive units being suspended within a substantially cylindrical housing between opposing walls to provide a substantial void space between each of said walls and said units of about 0.100" or more.

28. A shaped charge tubing cutter as described by claim 27 wherein said explosive units are separated from said said opposing walls by spacer elements.

29. A shaped charge tubing cutter as described by claim 27 wherein cone bases respective to the explosive unit cones include metallic thrust discs for confining and directing explosive energy.

30. A shaped charge tubing cutter as described by claim 29 wherein thrust disc base planes respective to said explosive units are spaced from adjacent housing walls by at least about 0.100".